

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of the claims in the application:

Listing of Claims:

1. (Currently Amended) A method for scheduling access to a device comprising:  
tracking a current state of a device;  
tracking a count of a number of scheduled requests which require a particular the current state; and  
~~scheduling requests to the device using the current state of the device, the count of the number of requests that have already been scheduled using the current state, switching the state of the device after determining the count reaches a threshold value established for a switch point indicating when to switch state, wherein after the count reaches the switch point and there are and receiving one or more incoming requests having which require an alternate state to the current state of the device, switching the state of the device to process incoming requests.~~
2. (Original) The method as set forth in claim 1, further comprising configuring the switch point.
3. (Currently Amended) The method as set forth in claim 2, wherein the switch point is dynamically configurable ~~adjustable~~ by software.
4. (Canceled)
5. (Currently Amended) The method as set forth in claim 1, wherein the device is a dynamic random access memory (DRAM), ~~the method further comprising selecting a scheduler type is selected from the group consisting of a DRAM bus turnaround scheduling, scheduler, a DRAM page scheduling and scheduler, and a DRAM physical bank switching scheduler.~~

6. (Currently Amended) A bus scheduler comprising:
  - an input configured to receive at least one incoming request, each request indicating a bus direction;
  - a switch point;
  - an indicator of a current bus direction;
  - a unit to track a count of requests processed using the current bus direction; and
  - logic configured to switch the direction of the bus to process incoming requests wherein after the count reaches a threshold value established for the switch point and there are incoming requests having the direction opposite to the current direction of the device bus, ~~switching the direction of the device bus.~~
7. (Previously Presented) The bus scheduler as set forth in claim 6, wherein the threshold value established for the switch point is configurable.
8. (Currently Amended) A scheduler comprising:
  - a switch point;
  - a first unit to track a current state of a device;
  - a second unit to track a count of requests that require a particular state;
  - logic configured to ~~determine-facilitate~~ an updated device state ~~using the switch point and count such that when the count crosses a threshold of the switch point, the device state is changed~~; and
  - scheduling logic configured to schedule access requests to the device using the updated device state.
9. (Previously Presented) The scheduler as set forth in claim 8, wherein a value of the threshold established for the switch point is dynamically configurable via software.
10. (Original) The scheduler as set forth in claim 8 wherein the device comprises a bus and the device state comprises a bus direction, said scheduling dependent upon the bus direction.

11. (Original) The scheduler as set forth in claim 8, wherein the device is a dynamic random access memory (DRAM) and scheduling is selected from the group consisting of DRAM bus turnaround scheduling, DRAM page scheduling and DRAM physical bank switching.
12. (Currently Amended) The scheduler as set forth in claim 6, wherein the threshold value established for the switch point is software configurable.
13. (Original) The scheduler as set forth in claim 8, wherein the device comprises a DRAM with multiple pages and the device state comprises the identity of at least one open page, said scheduling dependent on the at least one page opened.
14. (Original) The scheduler as set forth in claim 8, wherein the device comprises a DRAM with multiple physical banks and the device state comprises the last accessed physical bank, said scheduling dependent on the last accessed physical bank.
15. (Previously Presented) The scheduler as set forth in claim 8, further comprising: a register to store the threshold number of counts to establish the switch point.
16. (Previously Presented) The bus scheduler as set forth in claim 6, further comprising:  
a register to store the threshold number of counts to establish the switch point.
17. (Previously Presented) The scheduler as set forth in claim 8, wherein the scheduler is embedded on a System on a Chip.
18. (Previously Presented) The bus scheduler as set forth in claim 6, wherein the bus scheduler is embedded on a System on a Chip.
19. (Previously Presented) The scheduler as set forth in claim 8, further comprising:

a controller of a volatile memory coupled to the scheduler; and  
filter logic configured to combine thread quality of service scheduling and volatile  
memory scheduling to reorder servicing requests from one or more threads based on  
achieving a highest usage efficiency of the volatile memory while still satisfying quality  
of service guarantees for each thread.

20. (Previously Presented) The bus scheduler as set forth in claim 6, further  
comprising:

a controller of a volatile memory coupled to the scheduler via the bus; and  
filter logic configured to combine thread quality of service scheduling and volatile  
memory scheduling to reorder servicing requests from one or more threads based on  
achieving a highest usage efficiency of the volatile memory while still satisfying quality  
of service guarantees for each thread.

21. (Currently Amended) An apparatus to scheduling access to a device comprising:  
means for tracking a current state of a device;  
means for tracking a count of a number of scheduled requests which require a  
particular the current state; and

~~means for scheduling requests to the device using the current state of the device,  
the count of the number of requests that have already been scheduled using the current  
state, switching the state of the device after determining the count reaches~~ a threshold  
value established for a switch point indicating when to switch state, ~~wherein after the  
count reaches the switch point and there are~~ and receiving one or more incoming requests  
~~having~~ which require an alternate state to the current state of the device, ~~switching the  
state of the device to process incoming requests~~.